InterSystems HEALTHSHARE™

ILHIE PARTNER
On-Boarding Handbook

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Document Controls

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Document Authorization

Signing of this document indicates acceptance of its contents.

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Role:	Organization: InterSystems
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Name:	
Role:	Organization: Office of Health Information Technology
Signature:	Date:

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1. Executive Summary

The Illinois Office of Health Information Technology (OHIT) and the Illinois Health Information Exchange Authority are working together to build the Illinois Health Information Exchange (ILHIE). The ILHIE is a statewide exchange, part of the statewide secure electronic network for sharing clinical and administrative data among health care providers in Illinois. The ILHIE will allow health care providers and professional to exchange electronic health information in a secure environment which will help prevent duplicate tests and procedures and ensure the accuracy of prescriptions and other medical orders.

InterSystems HealthShare, www.intersystems.com/healthshare/index.html, was selected as the technology platform for the implementation of the ILHIE. InterSystems HealthShare is a comprehensive software solution that provides aggregation, de-duplication, and sharing of clinical data among multiple organizations on a regional or national basis.

The services that will be provided by the ILHIE include: Provider Directory, Master Patient Index, Record Locator Service, Security, User/System Authorization and Authentication, Patient Consent Management.

The outlined goals of the ILHIE include: improved treatment outcomes, improved coordination of care, strengthening of health information technology and increased patient collaboration. The four use cases include: Emergency Room, Specialist Referral, Meaningful Use/Provider Incentive Payment, and Public Health Reporting.

This handbook will introduce the Data Sharing Partner (PARTNER) management teams to the process of On-Boarding with the ILHIE. The action steps required of a participating PARTNER are described in detail.

The scope of this document is limited to the information exchange infrastructure based on IHE profiles. ILHIE also offers ILHIE Direct, a secure point to point messaging solution. This set of services can be accessed by contacting OHIT directly.

2. On-Boarding with the Illinois Health Information Exchange (ILHIE)

The Illinois Office of Health Information Technology has prepared this handbook to introduce the PARTNER management teams to the process of On-Boarding with the ILHIE. This document will outline the likely action steps associated with PARTNER participation in the statewide health information exchange infrastructure in general.

2.1 The ILHIE

The Illinois Office of Health Information Technology is working with the Illinois Health Information Exchange Authority to build the **The Illinois Health Information Exchange (ILHIE)**, a statewide exchange, part of the statewide secure electronic network for sharing clinical and administrative data among health care providers in Illinois. The ILHIE will allow health care providers and professionals to exchange electronic health information in a secure environment, which will provide vital patient information at the point of care, help prevent duplicate tests and procedures, and ensure the accuracy of prescriptions and other medical orders.

OHIT and InterSystems (ISC) will implement the ILHIE in four phases:

- Phase I is the Project Initiation phase and includes setting up the data center, configuring core services, setting up the PMO, establishment of the On-Boarding process, outreach to potential partners for On-Boarding, and beginning the On-Boarding of signed partners
- Phase II introduces Integration of the initial group of ILHIE test partners ("Alpha Partners") supporting the Emergency Room Use Case
- Phase III adds Integration of a new group of partners ("Beta Partners") and extends to include the Specialist Referral Use Case
- Phase IV focuses on production rollout and includes extension to the Public Health Reporting and Meaningful Use/Provider Incentive Payment Use Cases

2.2 ILHIE Services

During the alpha and beta phases, the ILHIE hopes to achieve interoperability with the core service offerings:

- Master Patient Index (MPI) using HealthShare HSPI
- Master Provider Directory (MPD) using HealthShare HSPD
- Use of ILHIE Record Locator Service (RLS)

The implementation of the ILHIE exchange services will facilitate the aggregation of a standard continuity of care record based on the consolidated information from all ILHIE data sources (in compliance with privacy and consent laws such as HIPAA and state statutes). After achieving alpha and beta phase milestones, incremental action plans will be formulated to enhance existing ILHIE exchange services as well as expand into new service areas. These plans will be based on priorities identified by PARTNER leadership and will use the ILHIE core services at their base.

ILHIE Use Cases

The following use cases will be demonstrated as part of the ILHIE implementation through the configuration of core services and integration of data partners

- **Emergency Room**
  When a patient presents at an emergency room of a participating provider/data partner, the clinician triages the patient to determine whether the patient's condition is an emergency. If so, the clinician locates, adds, or updates the patient's demographic information within the provider's or data partners electronic medical record (EMR) or health information exchange (HIE) system during intake. Adds and updates are sent to the ILHIE.

  Scenario 1: The provider's EMR/HIE system then sends a request to the ILHIE to retrieve the patient's C32 (patient summary). The C32 is then sent to the provider's EMR/HIE system.

  Scenario 2: The clinician uses the ILHIE portal to query the patient's records (C32 patient summary).

- **Specialist Referral**
  When a patient is referred by a Primary Care Physician to a Specialist, the Specialist sends a query for specific data from the EMR/HIE to the ILHIE.

  Scenario 1: The provider's EMR/HIE system then sends a request to the ILHIE to retrieve the patient's C32 (patient summary). The C32 is then sent to the provider's EMR/HIE system.

  Scenario 2: The clinician uses the ILHIE portal to query the patient's records (C32 patient summary).

- **Meaningful Use/Provider Incentive Payment**
  A provider captures patient encounter data in the EMR/HIE. The provider sends a report (quality measures) to HFS Performance Improvement Project (PIP) service to verify meaningful use.

  PIP service accumulates data and reports results to the provider. The PIP service authorizes payments.

- **Public Health Reporting**
  A patient presents to a Primary Care Physician and is diagnosed with a reportable condition. The Primary Care Physician prepares a report via EMR/HIE and forwards to the Public Health Node (PHN).

  The Public Health Node sends the report to the CDC (if required), the local public health agency, and to any state or national monitoring project (subject to appropriate privacy and consent rules).

2.4 IHE Transaction Workflows

The following four IHE transaction workflows in the ILHIE implementation will support the exchange of data required to satisfy the use cases described in the previous section. Further

technical discussion of IHE profile transactions utilized by these workflows is covered in more detail in sections 4 and 5.

- **Building ILHIE MPI and maintaining MPIIDs in the ILHIE IHE Community**
  Add/Update MPI transactions (PIX v3) are sent from the PARTNER EMR/HIE system to the ILHIE to add/update the ILHIE MPI. Matching algorithms are applied and the PARTNER EMR/HIE MRN (local identifier) is stored along with the ILHIE MPIID (global ILHIE identifier) for use in future communication via IHE Integration Profile Transactions. This workflow may be triggered by new patient registration at a Patient Identity Source or a patient demographic update at a Patient Identity Source.

- **Getting OnDemand Consolidated C32 from the ILHIE (Emergency Room Use Case)**
  IHE Integration Profile Transactions are exchanged between the PARTNER EMR/HIE system and the ILHE in order for the PARTNER EMR/HIE to request an OnDemand Consolidated C32 from the ILHIE. This workflow might be executed with a patient presenting in the ER.

- **The ILHIE Requesting OnDemand C32 from PARTNER**
  PARTNER C32s will be consolidated to generate the ILHIE's OnDemand C32. This workflow might be triggered by the request for an ILHIE consolidated OnDemand C32 from the PARTNER EMR/HIE system or a request via the ILHIE portal.

- **Building the ILHIE Provider Directory**
  The IHE Integration Profile Transactions add/update transactions are sent from the Provider Information Source to the ILHIE HealthShare Provider Directory. This workflow may be triggered by a new provider entry added at a Provider Information Source, an existing provider entry updated at a Provider Information Source, or an existing provider entry becoming inactive at a Provider Information Source.

3. PARTNER Roles/Expectations

A successful integration requires the commitment of significant resources from all parties involved. An organization should factor in the types of activities that comprise the integration process, the deliverables required to establish connectivity, and the resource commitments needed for a successful and timely integration in order to make an informed decision.

3.1 Technical Implementation

The technical implementation process consists of tasks which can be broken down into three categories, detailed below. The order of these tasks is not sequential and at any point in the project, tasks belonging to one or more of these categories may be happening simultaneously.

Connectivity – Tasks related to the establishment of basic communications between the PARTNER and ILHIE. This may include tasks such as SSL certificate generation and exchange, firewall exception rules, DNS configuration, etc.

IHE Transaction Setup – The IHE transactions are the vehicle with which data is exchanged between the ILHIE and a PARTNER Site. The transaction is, in effect, an envelope which contains the document itself. Depending on the use case in which a PARTNER is participating, several transaction types may need to be supported and a significant amount of repetitive testing.

C32 Document Analysis and Remediation – Tasks in this category deal with the clinical data being exchanged and primarily involve analysis work. The remediation processes address any deficiencies found in the C32 document and is often a negotiation process with the PARTNER's EMR/HIE Vendor followed by agreed upon changes, if needed.

3.2 PARTNER Deliverables

3.2.1 Completed IHE Questionnaire

The prospective PARTNER Site will be provided an ***IHE Questionnaire*** which should be shared internally for review with its technical resources and EMR/HIE Vendor. The purpose of the questionnaire is to identify any technical limitations of the prospective PARTNER's information system(s) and expedite the readiness assessment of the EMR/HIE system(s) in use at the PARTNER's site. Further details are described in Section 5.

3.2.2 Sample IHE Documents

The prospective PARTNER will provide the following sample documents as described further in Section 5:

- SAML Assertion (authentication)
- XACML Document (consent)

- Fully populated C32 (test data) generated from the PARTNER's EMR/HIE

3.3 Resource Requirements and Expectations

This section will provide general guidelines for the resources and time commitments needed for each task category by an ILHIE PARTNER for successful integration.

- **Project Management –** The **PARTNER Project Lead/Project Manager** must be identified as the point of contact for the PARTNER On-Boarding process. This person should attend all conference calls on behalf of the PARTNER and coordinate communications between the ILHIE, ISC, and their EMR/HIE Vendor. Additionally, the PARTNER will identify a **PARTNER Project Sponsor** that may be asked to attend calls periodically as needed.

- **Connectivity –** The PARTNER will need to provide a **Network Administrator/System Administrator** capable of performing (or ensuring completion of) any tasks needed to establish basic connectivity between the PARTNER Site and ILHIE. This person should be a technical resource that can participate directly in conference calls with ILHIE/ISC to plan and troubleshoot the setup process.

- **IHE Transaction Setup –** The PARTNER will need to provide a technical resource from its applications group who is capable of setting up and configuring interfaces for the EMR/HIE system. For the purposes of the PARTNER On-Boarding process, this role is referred to as **PARTNER Integration Engineer/Specialist**.

  In addition, the PARTNER Site will need to secure a commitment of support and/or implementation resources from their vendor, as needed, to complete the interface setup and testing. The roles to be identified to represent the EMR/HIE Vendor are the **EMR/HIE Vendor Project Manager/Key Contact** and the **EMR/HIE Vendor Integration Engineer/Specialist**.

- **C32 Document Analysis and Remediation –** A resource from the PARTNER Site's clinical applications group will be needed for the C32 analysis tasks. Preferably, this will be a person with a clinical background (Nurse, NP, MA, etc.) who also has technical experience with the system; for example, building clinical content, order sets, etc. At a minimum, the individual should have the skills and knowledge to access the site's test environments, enter complete and realistic clinical data, and generate a C32 document based off that data. For the remediation process, a resource from the EMR/HIE Vendor may be needed to address any deficiencies that arise as part of the analysis process. For the purposes of the On-Boarding process, this role is referred to as the **PARTNER Clinical Application Analyst/Subject Matter Expert**.

4. PARTNER Readiness to Participate

The initial baseline PARTNER readiness to participate is established during the PARTNER Identification Phase. An in-depth technical integration readiness analysis of IHE transactions and C32 content is described further in Section 6. PARTNER Readiness to Participate is a combination of commitment of resources and baseline technical prequalification which is finalized with the execution of a Data Sharing Agreement with ILHIE and assignment of the PARTNER Implementation Team.

4.1 Resource Commitment

It is crucial to the implementation process that all parties are prepared to provide the necessary resources as described in section 3. At minimum, the PARTNER will identify resources to cover the following roles:

- PARTNER Project Sponsor
- PARTNER Project Lead/Project Manager
- PARTNER Integration Engineer/Specialist
- PARTNER Network Administrator/System Administrator
- PARTNER Clinical Application Analyst/Subject Matter Expert
- EMR/HIE Vendor Project Manager/Key Contact
- EMR/HIE Vendor Integration Engineer/Specialist

Identification of the PARTNER Implementation team is a requirement to establish PARTNER Readiness to participate. A contact worksheet is provided to the prospective partner to identify their implementation team and is a prerequisite to beginning PARTNER On-Boarding.

4.2 PARTNER Technical Prequalification

The PARTNER Technical Prequalification process establishes baseline capabilities for an organization considering becoming an ILHIE PARTNER Site. The process ensures that all integration prerequisites are in-place prior to engagement to efficiently allocate resources. In order to participate in the ILHIE, the EMR/HIE Vendor must be able to satisfy the basic workflows for ILHIE data exchange. It is essential for the potential PARTNER to engage their EMR/HIE Vendor to confirm that all of the IHE Profile Transactions necessary for integration with the ILHIE are supported by the EMR/HIE version currently installed at the PARTNER site.

- **PARTNER EMR/HIE provides transactions to maintain the ILHIE MPI**
  The PARTNER EMR/HIE must be able to send PIXv3 Patient Add and PIXv3 Patient Revise IHE Integration Profile Transactions to maintain ILHIE MPIIDs (global ILHIE identifiers). The ILHIE HealthShare MPI will apply matching algorithms and assign/update the ILHIE MPIID along with the PARTNER MRN (local identifier) for future transactional reference. See figure 4.1.

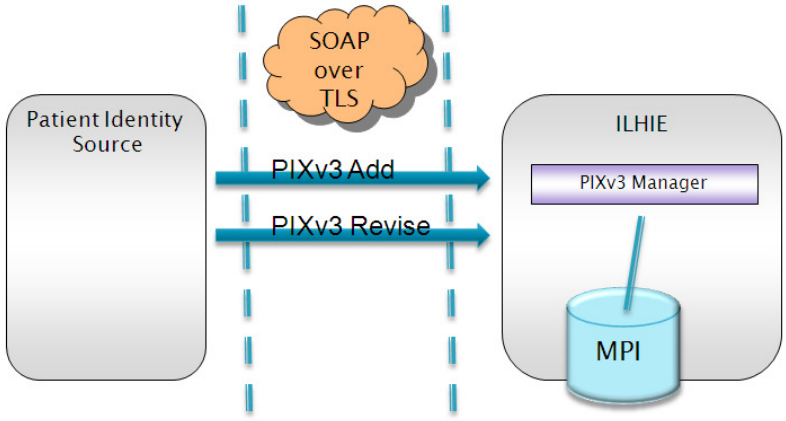


Fig 4.1

- **PARTNER EMR/HIE requests OnDemand Consolidated C32 from the ILHIE**
    - The PARTNER EMR/HIE must be able to send a PIXv3 Query Request (containing PARTNER MRN & PARTNER OID) and accept the PIXv3 Query response from the ILHIE (containing ILHIE patient MPIID & ILHIE OID).
    - The PARTNER EMR/HIE in return must be able to send an XDSb RegistryStoredQuery Request (containing ILHIE MPIID as patient ID, Document type = OnDemand, Doc Status=Approved) and accept the RegistryStored Query Response from the ILHIE (containing ILHIE OnDemand C32 unique ID & ILHIE Repository ID).
    - Finally, the PARTNER EMR/HIE must be able to send the XDSb RetrieveDocumentSet Request (containing ILHIE OnDemand C32 unique ID & ILHIE Repository ID) and accept the XDSbRetrieveDocumentSet Response with the ILHIE OnDemand Consolidated C32 attached.

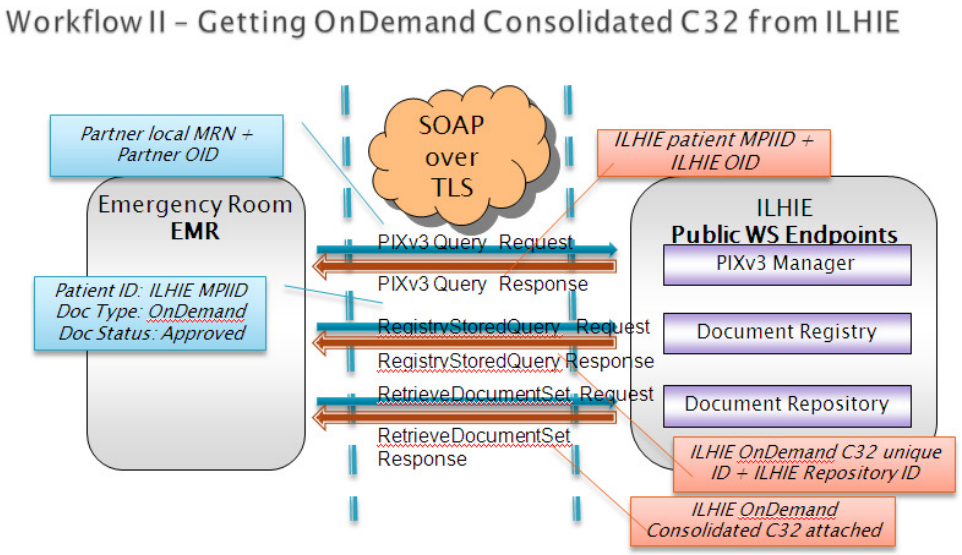


Fig 4.2

- **PARTNER EMR/HIE provides OnDemand C32 upon request by the ILHIE**
  - The PARTNER EMR/HIE must be able to accept an XDSb RegistryStoredQuery Request (containing PARTNER MRN as patient ID, Document type = OnDemand, Doc Status=Approved) from the ILHIE and return an XDSb RegistryStoredQuery Response (containing PARTNER OnDemand C32 unique ID & PARTNER Repository ID).
  - The PARTNER EMR/HIE must then accept the XDSb RetrieveDocumentSet Request (containing PARTNER OnDemand C32 unique ID & PARTNER Repository ID) and return the XDSb RetrieveDocumentSet Response with the PARTNER EMR/HIE OnDemand Consolidated C32 attached. See figure 4.3.

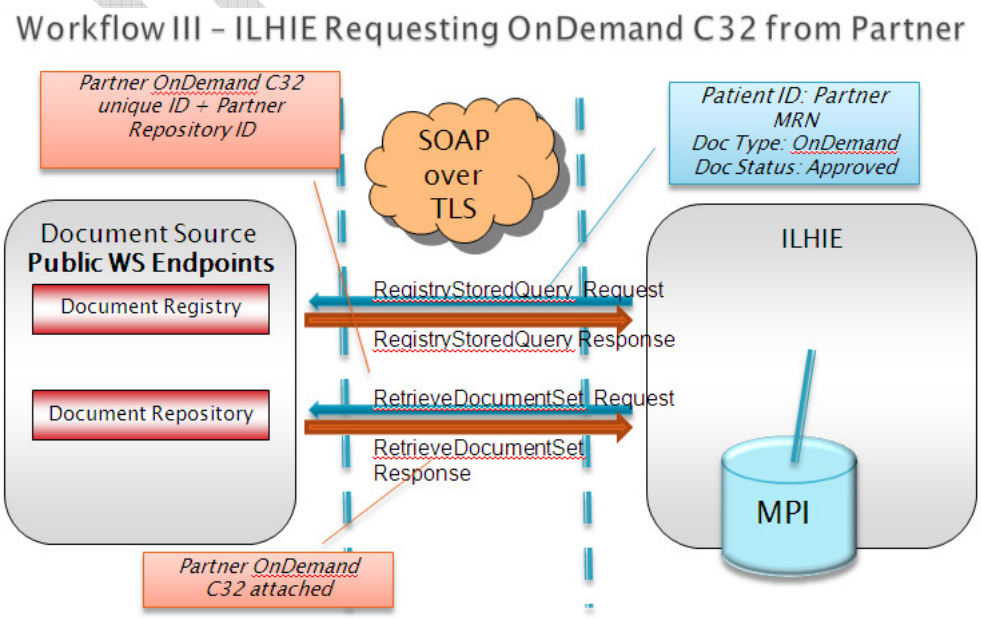


Fig 4.3

4.3 Data Sharing Agreement

The Office of Health Information Technology will provide a Data Sharing Agreement to the prospective PARTNER for approval and signature.

5. IHE Technical Readiness to Integrate

PARTNER IHE Technical Readiness to Integrate is assessed prior to proceeding with the ILHIE PARTNER configuration and PARTNER EMR/HIE connectivity. This analysis is performed to establish baseline capabilities of the PARTNER and the PARTNER's EMR/HIE in respect to the integration with the ILHIE. Once the PARTNER has provided sample IHE transactions and C32 content, IHE Technical Requirements are reviewed to ensure that all integration prerequisites are in place prior to engagement.

5.1 IHE Questionnaire

The ***IHE Questionnaire*** covers the technical requirements needed for basic communications and data exchange. The questionnaire asks the partner to identify their Clinical Software Vendors, Platforms, and Versions. The questionnaire will further request information to help establish EMR/HIE Vendor IHE Profile Support, XACML Support, SAML Support, HITSP CXX Specification Conformance, and CDA Content Module Support. The document is organized into the following sections:

- Document Purpose
- EHR System Information
- IHE Profiles / Actors
- SAML Assertion (Authentication)
- Supported HITSP Specifications
- XACML (Consent declaration)
- Supported CDA Content Modules
    - Entries
    - Sections
- Additional CDA Sections and Entries
- Additional Information (Patient Summary Documents)

5.2 Required IHE Transactions

The following IHE transactions are required in support of the workflows discussed in Sections 2 and 4. The EMR/HIE Vendor ability to support the exchange is confirmed during the PARTNER Readiness to Participate phase.

- PIXv3 Patient Add
- PIXv3 Patient Revise
- PIXv3 Query (Request and Response)
- XDSb RegistryStoredQuery (Request and Response)
- XDSb RetrieveDocumentSet (Request and Response)

5.3 Sample IHE Transactions and C32 Content

The partner will provide the following sample documents:

SAML Assertion (authentication)
Security Assertion Markup Language (SAML) is an XML-based open standard for exchanging authentication and authorization data between security domains.

XACML Document (consent)
The eXtensible Access Control Markup Language (XACML) standard defines a declarative access control policy language implemented in XML and a processing

model describing how to evaluate authorization requests according to the rules defined in policies.

Fully populated C32 (test data)
Sample C32 documents must be generated from the PARTNER's own EMR/HIE system. These cannot be vendor sample documents or documents generated from a vendor test/development system. Documents should contain as complete of data set as possible given the EMR/HIE Vendor's current capabilities.

5.4 Sample C32 Content Analysis / PARTNER Conformance

The format of data exchanged between ILHIE and its PARTNERs is the C32 specification (http://www.hitsp.org). The InterSystems Integrations Analyst will examine document structure and content to identify specification compliance, content, and triage identified issues. Meetings will be scheduled as needed to review and prioritize issues for resolution.

5.5 Remediation Process

Remediation of identified issues is an iterative process requiring active participation between the ILHIE, the PARTNER, the PARTNER's EMR/HIE Vendor, and ISC. Meetings will be scheduled as needed to assess issues identified during content and conformance analysis. Outstanding issues will be prioritized and assigned for resolution. Dependent on the nature of any outstanding issues, the ISC Integration Analyst will sign off on readiness to enter the configuration phase of the project.

6. On-Boarding Validation

Validation is the primary activity of the PARTNER On-Boarding and occurs in different forms throughout the process. During IHE Technical Readiness Validation, IHE Transactions and C32 Content are validated against IHE standards, HealthShare, and ILHIE requirements for conformance. Prior to PARTNER Integration Validation, Connectivity testing will ensure that IHE Transactions are exchanged between the PARTNER EMR/HIE and the ILHIE. PARTNER Integration Validation as described in this section is an organized activity that requires the most amount of time from the team. Following PARTNER Integration Validation, Consolidated System Testing will validate that the PARTNER is able to exchange data with other PARTNERs in the ILHIE.

6.1 ILHIE Environments Used for Validation

The ILHIE has several non-Production environments that are planned for use during PARTNER On-Boarding. The BASE environment is used during IHE Technical Readiness testing to validate IHE transactions and C32 content prior to establishing PARTNER connectivity. The TEST environment is primarily used to establish basic connectivity with the EMR/HIE test system without SSL. Since no PHI can be exchanged with this environment, validation activities in this environment are typically performed by the IHE and PARTNER technical teams using the EMR/HIE test environment. Part of Configuration and Connectivity testing for the UAT environment is the establishment of SSL. This UAT environment will be introduced to the PARTNER and ILHIE test teams for clinical validation.

6.2 IHE Technical Readiness Validation

IHE Technical Readiness Validation is performed by the ISC integration analyst against the ILHIE BASE environment using sample IHE Transactions and Sample C32 documents. This activity is described in more detail in section 5.

6.3 Connectivity testing

Connectivity testing is performed predominantly by ISC and PARTNER technical resources. IHE transactions and C32 documents are first exchanged between the TEST environments for the purposes of validating stability of configuration, customizations, and updates within the customer environment prior to release to the customer for Integrated and Consolidated System testing. This validation is repeated in the UAT environment with SSL in place.

Both activities utilize test plans which exercise each IHE transaction expected to satisfy the intended PARTNER workflow. Processing of C32 documents will validate that no general errors occur during consumption into the ILHIE HealthShare. Clinical validation is not performed here.

6.4 PARTNER Integration Validation

Integration Testing is performed predominantly by PARTNER resources with assistance from the Office of Health Information Technology and ISC. Integration Testing covers the interaction of the ILHIE UAT environment with individual PARTNER environments. Sample test plans are provided to the PARTNER and the Office of Health Information Technology for review and modification. Plans should be tailored by the PARTNER to test their workflow and validate data is presented correctly from both the technical perspective and a general clinical perspective. Thorough clinical testing occurs primarily with Consolidated System Testing.

6.5 Consolidated System Testing

Consolidated System Testing is performed predominantly between multiple PARTNERS and by PARTNER resources with the assistance of the Office of Health Information Technology and ISC. Consolidated System Testing is intended to validate system functionality across multiple PARTNERs against defined and agreed use cases in the ILHIE UAT environment. Sample test plans are provided to the PARTNER and the Office of Health Information Technology for review and modification. Plans should be tailored by the PARTNER to test their workflow and validate data is presented correctly from a clinical perspective. This activity occurs outside of the On-Boarding process and will be coordinated with other PARTNERs after successful conclusion of the new PARTNER's Integration validation.

7. PARTNER On-Boarding Process

The PARTNER On-Boarding Process commences upon execution of a Data Sharing Agreement and assignment of a PARTNER implementation team.

The PARTNER On-Boarding Process involves a collection of related, structured activities with the specific goal of successfully integrating the PARTNER with the Illinois Health Information Exchange (ILHIE). This process is divided into four distinct phases consisting of predefined work tasks, milestones, and deliverables. A summary description of each phase is outlined below and a sample timeline is shown in Figure 3.1.

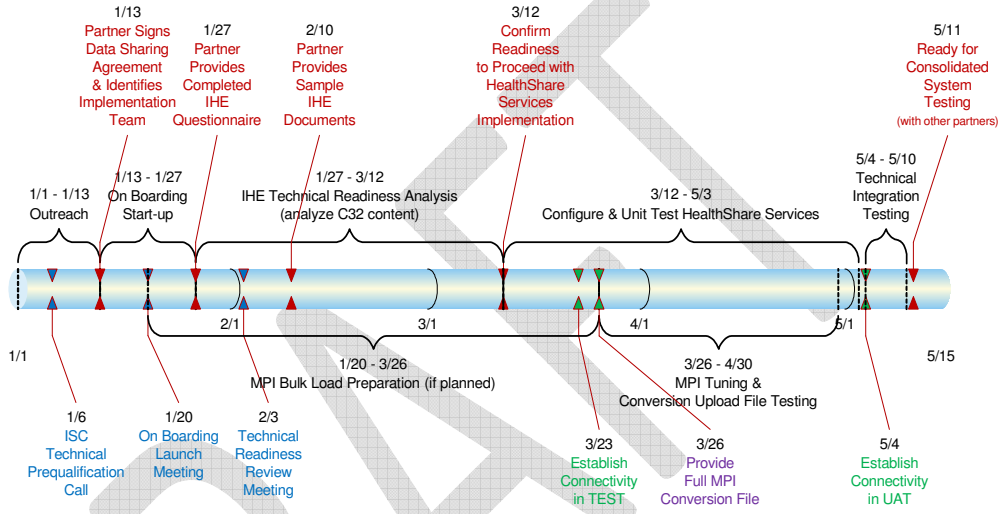


Figure 3.1

7.1 On-Boarding Start-up

The On-Boarding Start-up phase will be an introduction of the ILHIE to the PARTNER project team. It involves the introduction of project team members from the ILHIE, the PARTNER, and InterSystems Corporation (ISC) as well as defining of each team's roles and responsibilities. Project work tasks will be identified, deliverables agreed upon and milestones are scheduled. An overview of the integration software, InterSystems HealthShare, will be presented for informational purposes. Technical requirements needed for basic communications and data exchange between the ILHIE and PARTNER are defined in this phase. During this phase a technical overview of the ILHIE architecture will be presented to the project teams and Use Cases for the specific data exchanges will be reviewed. The ***IHE Questionnaire*** will be provided to the PARTNER for completion. This questionnaire is used to ascertain the specific technical requirements of the integration. Additionally, the PARTNER will provide sample IHE documents produced from their EMR/HIE system.

7.1.2 On-Boarding Launch Meeting

The goal of the Project Launch Meeting is to introduce the project team, provide an overview of the ILHIE, review the On-Boarding process, define team roles/responsibilities, and identify project deliverables. The PARTNER Implementation team will be educated on process, documentation, data needs and provide/review On-

Boarding materials. The typical audience includes all members of the PARTNER, the ILHIE, and the ISC Implementation Teams. It is advantageous for the PARTNER to include their EMR/HIE Vendor in this meeting; however the EMR/HIE Vendor is most essential during the IHE Technical Readiness Analysis phase. The desired format is generally in person with a planned duration of 2-3 hours.

The partner will complete the ***IHE Questionnaire*** (described in detail in Section 5) in a follow-up meeting.

7.2 IHE Technical Integration Readiness Analysis

The Readiness Analysis phase is meant to establish the baseline capabilities of the PARTNER and the PARTNER's EMR/HIE in respect to the integration with the ILHIE. This process is further described in Section 5.

7.2.1 IHE Questionnaire Review

The InterSystems Integration Analyst reviews the completed ***IHE Questionnaire*** for readiness to schedule the Technical Readiness Review Meeting.

7.2.2 Technical Readiness Review Meeting

The Technical Readiness Review Meeting is meant to review the ***IHE Questionnaire*** and HITSP C32 sample document requirements. During this meeting, all members of the PARTNER, the EMR/HIE Vendor, the ILHIE, and the ISC Implementation Teams are typically present.

Following the meeting, the partner will provide a sample SAML Assertion (authentication), XACML Document (consent), and a fully populated C32 (test data) generated from the PARTNER's own EMR/HIE system.

7.2.3 C32 Content Analysis / PARTNER Conformance Remediation

The InterSystems Integrations Analyst will examine document structure and content to identify specification compliance, content, and triage identified issues. Meetings will be scheduled as needed to review and prioritize issues for resolution.

7.3 Integration Configuration

During this phase, services are configured and connectivity with the PARTNER is established. The ILHIE will work with the PARTNER to create appropriate test scripts for validation of the IHE transactions and content delivery.

7.3.1 Create Test Plans

The ILHIE Analyst will work with the PARTNER to create test scripts and test cases for validation of IHE transactions and content delivery.

7.3.2 Establish Services and Connectivity

The InterSystems Technical Lead will configure ILHIE IHE Services and establish connectivity with the PARTNER EMR/HIE system.

7.4 Integration Validation

Integration Validation is the final phase of the On-Boarding process. Its purpose is to execute and validate the test scripts developed during configuration. Similar to the

readiness remediation process above, Integration Validation is an iterative process requiring active participation among Implementation Team members representing the PARTNER, the ILHIE, the EMR/HIE Vendor, and ISC. Successful validation will result in the ILHIE and the PARTNER executing an Acceptance Document. This process is discussed further in Section 6.

Appendix 1

ILHIE Use Cases

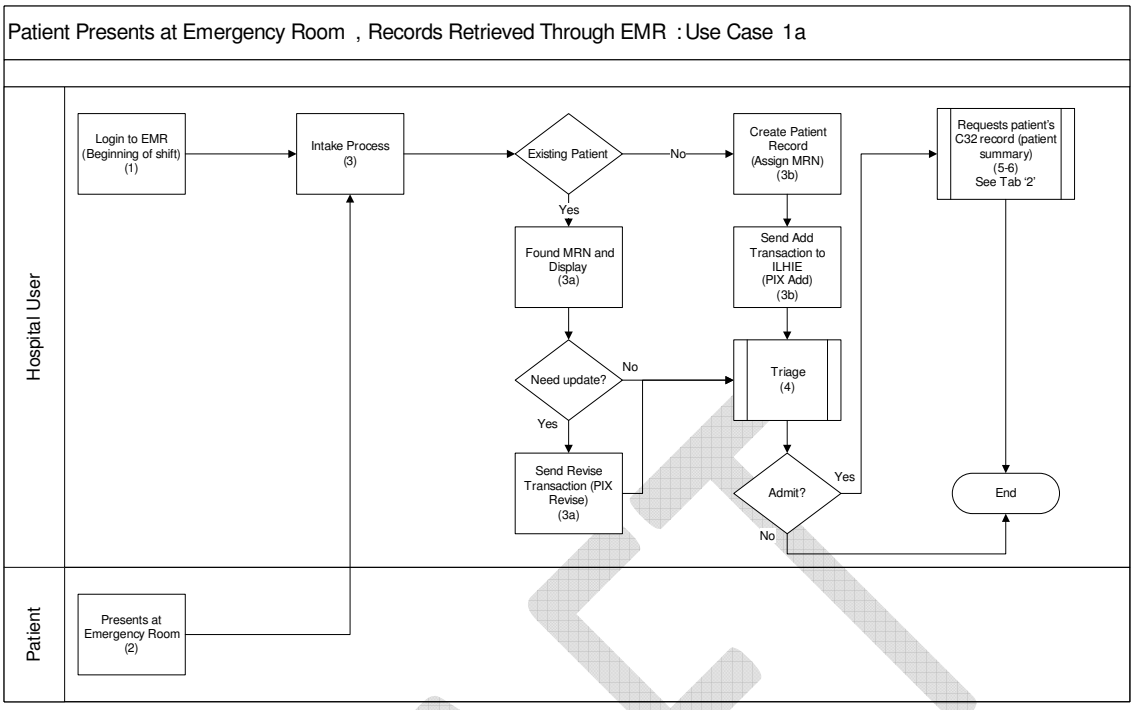
For the following two documented use cases (UC-1a & UC-1b) records are pulled from EMRs and consolidated by ILHIE and delivered to the originating provider's EMR. In many cases, regional HIEs may be involved in pulling records from their partner's EMRs and sending them to ILHIE.

UC-1a: Patient Presents at Emergency Room, Records Retrieved Through EMR

Use Case ID:	UC-1a		
Use Case Name:	Patient Presents at Emergency Room, Records Retrieved Through EMR		
Created By:	M. Scott	Last Updated By:	M. Scott
Date Created:	30 Jan 12	Date Last Updated:	10 Feb 12

Actors:	Patient, Clinician, EMR, ILHIE
Description:	When a patient presents at an emergency room of a participating provider/data partner, the clinician triages the patient to determine whether the patient's condition is an emergency. If so, the clinician locates, adds, or updates the patient's demographic information within the provider's or data partners electronic medical record (EMR) system during intake. Adds and updates are sent to ILHIE. The provider's EMR system then sends a request to ILHIE to retrieve the patient's C32 (patient summary). The C32 is then sent to the provider's EMR system.
Trigger:	A patient presents at an emergency room of a member provider/data partner.
Pre-conditions:	Clinician determines that patient has an emergency, and patient can be positively identified.
Post-conditions:	The patient is treated.
Normal Flow:	1. User Login to EMR (beginning of shift). 2. Patient presents at emergency room. 3. Clinician conducts intake process. a. Clinician finds patient record in the EMR system. i. Retrieve patient's medical record number (MRN) and demographic information. ii. If updates are made to the patient's demographic information, the EMR system sends a "PIX Revise" transaction to ILHIE. b. Clinician creates patient record in EMR system. i. Clinician inputs demographic information and assigns patient medical record number (MRN). ii. EMR system sends a "PIX Add" transaction to ILHIE. 4. Clinician conducts triage and determines if an emergency exists. a. If non-emergency, the process ends.

	b. If emergency exists, patient is admitted. 5. Clinician requests patient's C32 record (patient summary). a. EMR System sends a "PIX Query" transaction to ILHIE using the EMR's ID. b. ILHIE returns ILHIE master patient index (MPI) ID to the EMR system. c. EMR then sends Registry Stored Query (RSQ) transaction to ILHIE with the document type (type = on demand) d. ILHIE sends back a document ID and a Repository object ID (OID) to the EMR system. e. The EMR system sends a document retrieve request to ILHIE, specifying the document ID and Repository OID. 6. ILHIE gathers patient information from data partners and returns patient summary a. ILHIE queries data partners to locate patient's information, compiling the patient's information from all providers/data partners with information on the patient. b. ILHIE sends patient summary (C32) to the provider's EMR system. 7. Clinician reviews C32 information. 8. Process ends.
Alternative Flows:	The provider/data partner may query the patient's C32 information directly from the ILHIE portal instead of through their EMR system. See Use Case 1b.
Exceptions:	None
Includes:	None
Extends:	None
Priority:	Normal
Frequency of Use:	On-Demand
Business Rules:	TBD
Special Requirements:	None
Assumptions:	1) User is already logged into EMR system. 2) Break the glass consent model is in place – override consent policy option "BTG".
Notes and Issues:	

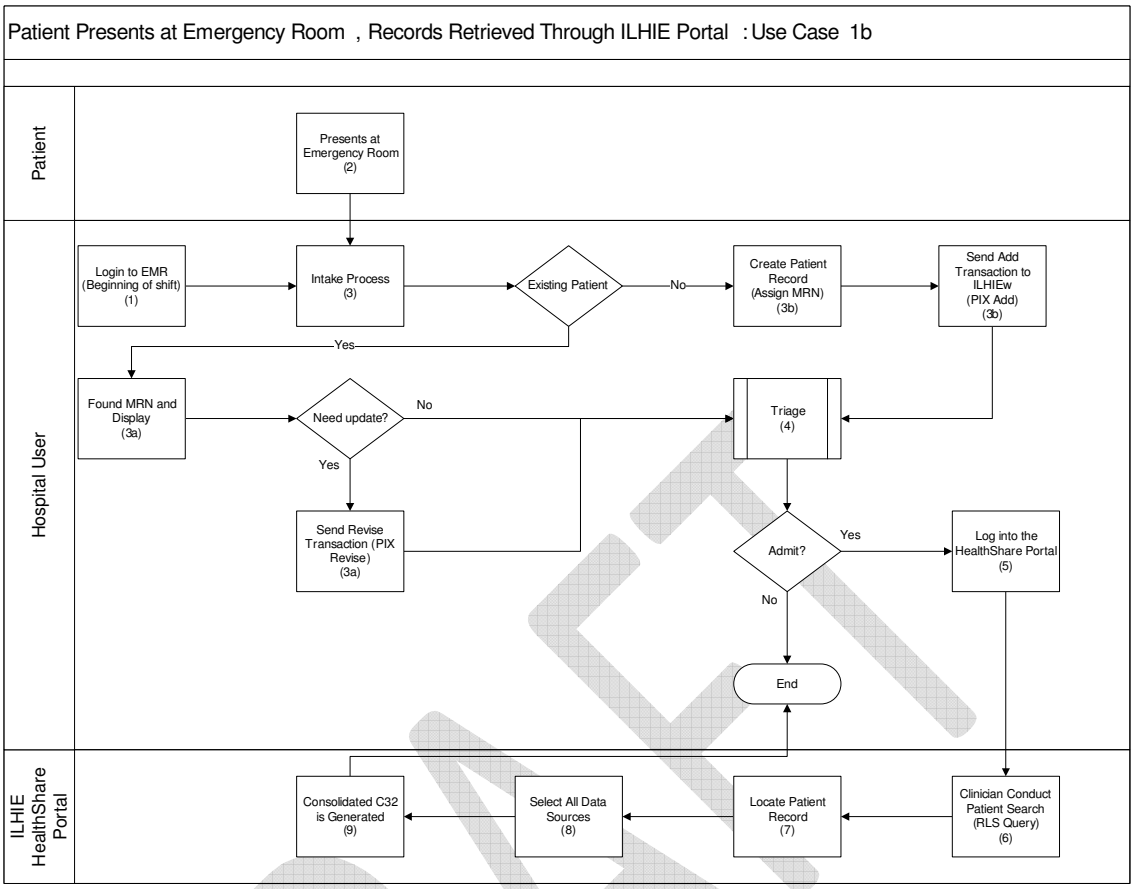


UC-1b: Patient Presents at Emergency Room, Records Retrieved Through ILHIE Portal

Use Case ID:	UC-1b		
Use Case Name:	Patient Presents at Emergency Room, Records Retrieved Through ILHIE Portal		
Created By:	M. Scott	Last Updated By:	M. Scott
Date Created:	30 Jan 12	Date Last Updated:	10 Feb 12

Actors:	Patient, Clinician, EMR, ILHIE
Description:	When a patient presents at an emergency room of a participating provider/data partner, the provider triages the patient to determine whether the patient's condition is an emergency. If so, the clinician locates, adds, or updates the patient's demographic information within the EMR system during intake. Adds and updates are sent to ILHIE. The clinician uses the ILHIE portal to query the patient's records (C32 patient summary).
Trigger:	A patient presents at an emergency room of a member provider.
Pre-conditions:	Clinician determines that patient has an emergency, and patient can be positively identified.
Post-conditions:	The patient is treated.
Normal Flow:	1. User Login to EMR (beginning of shift).

	2. Patient presents at emergency room. 3. Clinician conducts intake process. a. Clinician finds patient record in the EMR system. i. Retrieve patient's medical record number (MRN) and demographic information. ii. If updates are made to the patient's demographic information, the EMR system sends a "PIX Revise" transaction to ILHIE. b. Clinician creates patient record in EMR system. i. Clinician inputs demographic information and assigns patient medical record number (MRN). ii. EMR system sends a "PIX Add" transaction to ILHIE. 4. Clinician conducts triage and determines if an emergency exists. a. If non-emergency, the process ends. b. If emergency exists, patient is admitted. 5. Clinician logs into ILHIE HealthShare Portal. **(Steps 6-9 are conducted within the ILHIE Portal)** 6. Clinician conducts search (RLS Query). 7. Clinician requests patient clinical information. Clinician must override default using "Break the Glass" (indicating an emergency situation) as reason for override. 8. ILHIE selects all data sources, gathers patient information from data partners, and returns patient information to portal. 9. Clinician reviews C32 information. 10. Process ends.
Alternative Flows:	The provider may query the patient's C32 information via their own EMR system instead of using the ILHIE portal. See Use Case 1a.
Exceptions:	None
Includes:	None
Extends:	None
Priority:	Normal
Frequency of Use:	On-Demand
Business Rules:	TBD
Special Requirements:	None
Assumptions:	1)User is already logged into EMR system. 2) Break the glass consent model is in place – override consent policy option "BTG".
Notes and Issues:	


Patient Presents at Emergency Room , Records Retrieved Through ILHIE Portal : Use Case 1b
Patient
Hospital User
ILHIE HealthShare Portal
Presents at Emergency Room (2)
Login to EMR (Beginning of shift) (1)
Intake Process (3)
Existing Patient
No
Create Patient Record (Assign MRN) (3b)
Send Add Transaction to ILHIEw (PIX Add) (3b)
Yes
Found MRN and Display (3a)
Need update?
No
Yes
Send Revise Transaction (PIX Revise) (3a)
Triage (4)
Admit?
Yes
No
Log into the HealthShare Portal (5)
End
Consolidated C32 is Generated (9)
Select All Data Sources (8)
Locate Patient Record (7)
Clinician Conduct Patient Search (RLS Query) (6)

Appendix 2

Frequently Asked Questions for Illinois Providers and Professionals

What is Health Information Technology?
Over the past 20 years, there has been a major change due to computers and electronic technology. Areas such as banking, shopping and the news have long ago adopted e technology. Until now, the field of healthcare has largely not used this technology, which is sometimes called health IT

What is Health Information Exchange?
Today, most providers write patient medical information on paper charts which are not easily available and are hard to share with their patients and with other care providers. Health Information Exchange (HIE) is when a healthcare provider such as a doctor's office, specialist, hospital, clinic or lab share patient health records electronically through a secure network.

What are the Benefits of Health Information Exchange?
When fully functional and exchangeable, electronic health records can provide more than what paper records can deliver, including:

Improved Treatment Outcomes
Patients receive better care if providers have access to complete information. It can also improve diagnostics and reduce or prevent medical errors.

Improved Coordination of Care
Better integration, organization and sharing of patient health records among all providers involved in a patient's care will ensure that each specialist has the same accurate and up-to-date information about a patient; ultimately leading to better treatment and care outcomes.

Improved Efficiency in Practices
Improved integrated scheduling that links appointments to progress notes, automated coding, claims management, improved communication with labs, and health plans, formulary checks etc. can all provide efficiencies and cost savings.

Strengthens Health Information Technology
Electronic Health Record systems interface with a provider's existing technology and will adapt to future expanded technology.

Increases Patient Collaboration
Shared access to electronic records can create a more collaborative and informed patient. This is especially important in the management and treatment of chronic conditions. It can also provide patients with follow up care, information links, and the exchange of emails between providers and patients.

Fewer Forms for Patients to Fill Out
Provider access to patient health records will reduce the need for patients to fill out duplicate information when visiting various health services.

Access to Stimulus Funds and Other Incentives

Helps maximize provider access to funding for the adoption of Health Information Technology and the demonstration of meaningful use.

What is Meaningful Use?
Meaningful Use is part of a coordinated set of regulations established to help create a private and secure electronic health information exchange system. To become "Meaningful Users" providers need to demonstrate they're using certified electronic health records technology in ways that can be measured in quantity and in quality.
For more information visit:
https://www.cms.gov/ehrincentiveprograms/30_Meaningful_Use.asp

Are There Provider Incentive Programs?
The Medicare and Medicaid Electronic Health Record Incentive programs provide incentive payments to eligible professionals, hospitals and critical access hospitals as they adopt, implement, upgrade or demonstrate meaningful use of certified technology in their first year of participation and demonstrate meaningful use for up to five remaining participation years. Registration for both the Medicare and Medicaid programs are now open. For information and to register for Medicare incentive payments visit:
https://www.cms.gov/ehrincentiveprograms/20_RegistrationandAttestation.asp,

For more information and to register for Medicaid incentive payments visit:
http://www.hfs.illinois.gov/ehr/.
Te learn more about which electronic systems and modules are certified for the Medicare and Medicaid Electronic Health Records Incentive Programs, visit
http://healthit.hhs.gov/

What is ILHIE Direct Messaging?
The ILHIE Direct Messaging service (Offered at no cost December 2011 throughout 2012) will help providers to achieve the key Stage 1 requirements for Meaningful Use for exchange, and provide an easy "on-ramp" for a wide set of providers and organizations looking to adopt. It offers a secure, scalable, standards-based method of sending encrypted health information directly to known, trusted recipients. For more information contact us at hfs.hie@illinois.gov, or call 1-312-814-1600.

What are Regional Extension Centers?
To assist providers in implementing and becoming "Meaningful Users" of electronic health records, two Illinois Regional Extension Centers provide outreach and support services to health care providers. For more information about implementation, contact the extension Centers at these addresses: For Statewide Providers: www.ilhitrec.org, For Chicago Providers: www.chitrec.org/

What About Privacy and Security?
The same Federal health information privacy protections that apply to paper records also apply to electronic health records.
In accordance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the U.S. Department of Health and Human Services (HHS) has set forth standards for protecting the privacy and security of certain health information, whether it is stored on paper or electronically. The HIPAA Privacy

Rule (http://www.healthit.gov/providers-professionals/limits-using-patientinformation) provides Federal protections for individually identifiable health information, sometimes referred to as "protected health information". The Privacy Rule protects paper, electronic, and oral information. The Security Rule applies only to information maintained in electronic form. This includes information in electronic health records.

What is E-Prescribing?

E-prescribing is an electronic way to generate prescriptions through an automated data-entry process utilizing e-prescribing software and a transmission network which links to participating pharmacies.

E-prescribing has been described as the solution to improved patient safety and reducing medication costs. It is estimated that approximately 7,000 deaths occur each year in the United States due to medication errors. These errors are predominately due to hand-writing illegibility, wrong dosing, missed drug-drug or drug-allergy reactions. With approximately 3 billion prescriptions written annually, which constitutes one of the largest paper-based processes in the United States, the writing of prescriptions can be streamlined and efficient by using an eprescribing system.

Current and Future HIE Participants At-a-Glance

For more information visit www.hie.illinois.gov/